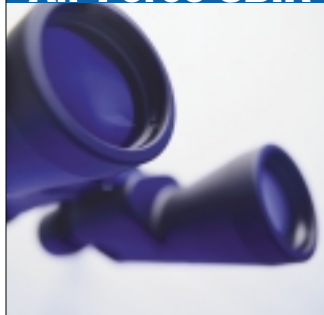


Air Force SBIR Update

Spies, Sports, and Recipes –
the SBIR Urban Legends**Stephen Guilfoos**
Air Force SBIR
Program Manager

I am constantly amazed at how

many misconceptions about the

Small Business Innovation

Research Program (SBIR) keep

floating around. Like “Urban Legends”, no matter how many times you debunk them, they continue to persist. Even with this impossible mission, let me try to expose some of these misunderstandings.

Spies

One of the biggest falsehoods is that some small companies, who already are doing business with the government, have an inside track and are “wired to win” SBIR contracts. Some companies, new to government contracts, see small businesses with existing contracts winning new SBIR contracts. There’s a perception that these companies with existing contracts have “spies” on the inside feeding information to the government and in return, being rewarded with SBIR contracts.

The Air Force takes great strides at precluding collusion with companies already doing business with the Air Force. We make sure that more than one government individual is on the team that reviews the proposals. Further, senior management at the local level examines

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SBIR Tech Issues

Tech Issues is intended for personnel directly involved in the operation and support of the AF SBIR program.

Air Force SBIR Phase II Enhancement "Pilot" Program

On selected active Phase II awards, the Air Force will invite a limited number of Phase II awardees to apply for a Phase II Enhancement. This program will extend the existing Phase II contract award for up to one year. The Air Force will match dollar for dollar up to \$250,000 of non-SBIR DoD matching funds. The main purpose of the Phase II Enhancement Program is to address new unforeseen technology barriers that were discovered during the Phase II work and to increase the small business potential for commercialization.

The program is not intended to simply do more R&D for a poorly planned Phase II work effort. We want to identify those high potential Phase IIs that have come up against a barrier that keeps the technology from going onto a Phase III.

The Air Force technical point of contact (POC) for each SBIR Phase II project will assess if the small business is eligible for an enhancement and if they have experienced an unforeseen technology barrier during the Phase II effort. We expect the AF technical POC to be involved with their small business counterparts

during the Phase II development work. Once the technical barrier is identified and the work effort to conquer the barrier scoped, the AF technical POC will request the local AF SBIR manager to consider funding a Phase II enhancement.

The local SBIR manager, along with their local management, will decide which small businesses will receive a request for Phase II Enhancement proposals. The Air Force technical POC will identify and arrange for the non-SBIR DoD funds to be used as matching funds. The DoD funds do not necessarily

have to be R&D funds. Other fund sources may be used. However, separate Contract Line Item Numbers (CLINS) that address each type of funds need to be used on the Phase II contract extension.

The reason we require DoD matching funds is that we fully expect the Air Force program offices to leverage our SBIR technology development work and to take the necessary steps to transition the technology into their systems and subsystems.

The Air Force expects to award up to 40 Phase II enhancements this year.

We recently reviewed the official Air Force SBIR Program database from 1995 through early March 2001. Based on the total dollar amount won by small businesses participating in the program here is our list of the Top 25 States.

SBIR Facts & Figures

State	Phase I Awards	Phase I Dollars	Phase II Awards	Phase I Dollars	Total Dollars
CA	604	\$56,581,633.00	282	\$219,465,483.00	\$276,047,116.00
MA	388	\$37,298,701.00	181	\$133,052,153.00	\$170,350,854.00
OH	182	\$16,957,779.00	88	\$65,214,432.00	\$82,172,211.00
VA	154	\$14,564,810.00	77	\$58,059,633.00	\$72,624,443.00
CO	127	\$12,358,245.00	67	\$52,591,193.00	\$64,949,438.00
NY	103	\$9,406,025.00	46	\$39,493,398.00	\$48,899,423.00
NM	94	\$8,400,667.00	49	\$32,108,196.00	\$40,508,863.00
TX	89	\$8,225,000.00	37	\$26,283,833.00	\$34,508,833.00
FL	71	\$6,628,909.00	37	\$24,537,617.00	\$31,166,526.00
MD	84	\$7,877,868.00	28	\$20,125,246.00	\$28,003,114.00
PA	66	\$6,178,086.00	30	\$20,633,369.00	\$26,811,455.00
NJ	63	\$5,862,368.00	25	\$19,135,537.00	\$24,997,905.00
AL	50	\$4,716,081.00	26	\$17,191,499.00	\$21,907,580.00
MI	41	\$3,877,066.00	23	\$16,876,422.00	\$20,753,488.00
WA	39	\$3,550,372.00	21	\$14,629,372.00	\$18,179,744.00
MN	46	\$4,305,512.00	17	\$10,744,250.00	\$15,049,762.00
IL	21	\$1,934,860.00	10	\$12,271,348.00	\$14,206,208.00
CT	38	\$3,500,998.00	15	\$10,657,287.00	\$14,158,285.00
GA	30	\$2,948,315.00	15	\$11,101,175.00	\$14,049,490.00
NH	28	\$2,420,623.00	13	\$9,590,687.00	\$12,011,310.00
AZ	39	\$3,672,952.00	10	\$7,143,618.00	\$10,816,570.00
UT	17	\$1,610,888.00	10	\$7,204,106.00	\$8,814,994.00
TN	21	\$1,879,052.00	9	\$6,509,216.00	\$8,388,268.00
NC	18	\$1,744,263.00	5	\$3,699,327.00	\$5,443,590.00
MO	11	\$1,004,789.00	6	\$4,035,660.00	\$5,040,449.00

AF SBIR Impact

New "Nanocomposite" Materials Offer Significant Advantages For Air Force Technology Development

Air Force Requirement

The Air Force is constantly searching for cutting edge materials for its next generation aircraft. Strength and insulation are often at odds with weight and cost with new materials. Any small advantage in these trade-offs can be important in the extreme environment of aerospace.

SBIR Technology

Using Air Force SBIR Phase I and II contracts, Triton chemists mixed nanometer-sized (1x109 meter) particles of specially modified silicates with conventional polymers to develop a class of materials that produce significant property improvements with just a small percentage addition of tiny silicate particles. With this addition these "nanocomposites" outperform conventional polymers by two to four times in:

- Barrier (resistance to leakage in or out)
- Impact resistance
- Flame resistance
- Thermo-mechanical properties (strength at high temperatures).

Payoff

Triton has already demonstrated applications for this new class of materials in such innovative areas as ablative rocket motor casings, highly scratch-resistant aviator goggles, and long field-life food containers. Significantly, Triton was able to take the concept to product prototype in eighteen months, an extremely rapid development cycle for a new class of materials. Triton is also using SBIR Phase II and III support from the Air Force with further contracts from the Army and Navy to improve the quality of protective eyewear for the warfighter.

Technology Transfer/Commercialization

Today, Triton's ORMLAS™ brand of high barrier plastic and its NanoTuf™ chemical and scratch resistant coatings are core to the Triton's success. Diverse commercial applications for nanocomposites include replacement of "filled" and structural components in automobiles and upgrading of conventional fiber composites for packaging. A major athletic footwear manufacturer needed a technology so the cushioning sole would not lose its pressure over time. In an athletic



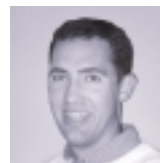
shoe, helium filled capsules can be used to provide greater cushioning and shock absorption than conventional shoes. The cushioning pouch alone enabled the manufacturer to launch a new line of footwear with a retail value in excess of \$250 million. The business value to Triton is projected to be several million dollars.

SBIR Partner

Triton Systems, Inc.
Chelmsford, MA

Employees

50



"The improvements in material properties that was key to the successful spin-off of this nanotechnology into the athletic shoe industry is a good example of the promise of creating better materials by nanoscaled manipulation and a direct result of the synergism between government researchers in the Air Force Research Laboratory's Polymer Branch and the small business professionals at Triton Systems, Inc."

Jeff Baur, Ph. D.
AFRL Materials and
Manufacturing Directorate
Wright-Patterson AFB, OH

Air Force SBIR Update

Continued from front page...

the results of all the reviews prior to awarding any of the SBIR contracts.

Sports

Another SBIR urban legend is that, like in sporting events, with any kind of luck, anyone on any given day can win a SBIR contract award. On the surface this is true – anyone can win an award. But like sporting events, a company has to do their homework and be well prepared. As in sports, it is a very strong competition, and the best of the best win.

This means for every winner, there may be many losers. It doesn't mean all those companies who didn't win were poor performers or even had bad proposals. It does mean that the winner, on this

day, had a better proposal. They had a better proposal because they had prepared by doing their homework and addressed all aspects of the topic more thoroughly than any of their competitors.

Recipes

The third urban legend is that there is a simple but secret cookbook recipe for winning. That by adding a dash of this and cup of that – BAM! – you have a winning proposal. The reality of winning requires companies follow the recipe precisely by using all the solicitation ingredients and directions, and to be responsive to the technical requirements in the topic.

Homework means checking the various DOD and AF websites. It also means talking to the AF

technical points of contact during the pre-solicitation stage. Following the solicitation rules insures that the published ground rules even the playing field for all companies. And lastly, being responsive to the technical requirement means a company is proposing solutions to the needs of the Air Force.

The Air Force SBIR program is a competitive opportunity for companies who are willing to do their homework and follow the ground rules. We evaluate every proposal against the three criteria: technical approach, principal investigator qualifications, and the commercialization plan.



**Air Force
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Science and Technology for Tomorrow's Aerospace Force



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The goal of the Air Force SBIR Program is to serve the technology needs of Air Force warfighters. It accomplishes its mission as part of the Air Force Research Laboratory's (AFRL) integrated research and development (R&D) team. AFRL's mission is leading the discovery, development, and integration of affordable warfighting technologies for our aerospace forces.

SBIR Advantage is published quarterly by the Air Force SBIR Program office. This publication offers an overview of AF SBIR issues and information. The purpose of *SBIR Advantage* is to provide Air Force, DoD, and other government leadership with additional insight into the vital contributions made by the SBIR program to Air Force R&D.

SBIR Advantage is available online at: www.afrl.af.mil/sbir

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